

SECTION 2

EXECUTIVE SUMMARY

This report documents the results of an Airport Master Plan Update study for Cochise College Airport. The purpose of the study is to provide a long-range plan for the development of facility improvements at the airport to meet the needs of the College's aviation program. The important findings and recommendations of the study are summarized below.

EXISTING FACILITIES (Section 3)

- The Cochise College Airport is located on the College's Douglas campus along U.S. Highway 80, approximately eight miles west of Douglas and 16 miles east of Bisbee in southeastern Arizona.
- Cochise College Airport is a public use airport. Although it is open to the public and serves transient aircraft, its primary function is to accommodate the College's aviation program. Only aircraft owned and operated by the College are permanently based at the airport. The College does not function as or provide the full services of a traditional Fixed Base Operator (FBO). It is not the intention of the College to do so since it cannot compete, due to its governmental status, with private business. However, fuel services and limited emergency maintenance are available during normal operating hours of the College during the normal business week.
- Airport facilities and services include the following:
 - (a) A 5,303-foot runway, designated Runway 5/23
 - (b) Low intensity runway edge lights
 - (c) Lighted segmented circle, tetrahedron and wind sock
 - (d) Full length parallel taxiway
 - (e) Unicom
 - (f) Precision Approach Path Indicator (PAPI)
 - (g) Rotating Beacon
 - (h) Compass calibration pad
 - (i) Technology Center building housing classrooms, training facilities, hangar, shops and administrative functions.
 - (j) Aircraft storage shelters for 10 aircraft
 - (k) Aircraft parking apron for 24 aircraft
 - (l) 10,000-gallon aviation gas storage tank
 - (m) Perimeter fencing

FORECASTS OF AVIATION DEMAND (Section 4)

- The number of aircraft based at the airport is projected to increase from present level of 15 to 27 in the year 2020 (Table 2-1). Multi-engine piston aircraft are expected to grow from one to four during this period.
- Annual aircraft operations are projected to increase from 55,180 in 1999 to 98,830 by the year 2020 (Table 2-1). The majority of these operations will be local training operations by single engine piston aircraft.
- The projected rate of growth in based aircraft (3.6 percent a year) and flight activity (3.5 percent a year) at the airport from 2000 to 2010 is expected to closely match the growth rate of student pilots projected by the FAA over the same period (3.5 percent a year).

Table 2-1
AIRPORT ACTIVITY FORECASTS
COCHISE COLLEGE AIRPORT

Type of Operation	Actual [a]	Forecast [b]		
	1999	2005	2010	2020
Based Aircraft				
Single Engine Piston	14	17	19	23
Multi-Engine Piston	<u>1</u>	<u>3</u>	<u>3</u>	<u>4</u>
Total	15	20	22	27
Annual Operations				
Air Taxi	480	480	480	480
General Aviation Local	51,650	68,800	75,700	92,900
General Aviation Itinerant	3,000	4,000	4,400	5,400
Military	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>
Total	55,180	73,330	80,630	98,830
Peak Hour Operations	50	58	60	66
Annual Fuel Pumped (Gallons)	32,000	43,000	47,000	57,000

[a] Source: Cochise College Aviation Program. Based aircraft data is for 2000.

[b] Source: P&D Aviation analysis.

- Peak hour operations at the airport are projected to increase from 50 in 1999 to 66 in 2020.
- Approximately 57,000 gallons of aviation gas are expected to be pumped at the airport in 2020, compared with 32,000 gallons in 1999.

FACILITY REQUIREMENTS (Section 5)

- The existing airport facilities, with one exception, meets the FAA planning and design standards for current operations. The parallel taxiway width does not meet the standards for the general category of aircraft applied to the airport, although it does meet the aircraft-specific standard for the Beech Baron, the largest aircraft currently operated by the College. It is recommended that the taxiway be widened from 20 to 25 feet to meet FAA design standards for the general category of aircraft operating at the airport.

To continue to comply with RSA and ROFA standards, it is recommended that the rodeo training area service road at the end of Runway 23 continue to be used only on a controlled-basis, whereby the road is closed when Runway 5 is in use.

- The following improvements are recommended to enhance the operational capabilities of the airfield:
 - (a) Runway end identifier lights (REILs) are recommended in the short-term to provide rapid and positive identification of the approach end of the runway.
 - (b) A global positioning system (GPS) instrument approach procedure should be provided, and the runway approaches should be protected for this capability.
 - (c) The runway and taxiway lighting systems should be upgraded from low intensity to medium intensity to provide better nighttime visibility of the airfield.
 - (d) An Automated Weather Observing System should be installed to provide weather data to pilots and support the future instrument approach capability at the airport.
 - (e) Also recommended are the installation of pilot-controlled lighting to allow pilots to activate runway lights from the aircraft when the airport is unattended, and a ground communications outlet, a device that facilitates radio communication between a remote air traffic control facility and the aircraft.

- The following improvements are recommended to accommodate the projected growth in the College's aviation program:
 - (a) As the aviation program expands, additional space will be needed for classrooms for flight training and avionics, simulator facilities and dispatch area. In the future, if other programs occupying the Technology Center have a reduced need for space in the building, some aviation program activities could be expanded into that area, particularly classroom and simulator activity.
 - (b) Vehicle parking space at the Technology Center will also have to be expanded in the future unless there are reductions in the activity of other program uses of the building.
 - (c) A new aircraft maintenance hangar will be needed for maintenance of the flight school aircraft fleet.
 - (d) Ten additional aircraft shelter spaces will be needed between 2001 and 2020 to accommodate the anticipated increase in aircraft located at the airport.
 - (e) Eight additional aircraft tiedown spaces will be needed between 2001 and 2020.
- Although they are not recommended, it was determined that the following improvements, in addition to those described above, would be necessary to accommodate turboprop aircraft if used regularly in future flight training at Cochise College Airport:
 - (a) The runway would need to be widened from 72 to 75 feet to accommodate the larger, turboprop aircraft.
 - (b) The taxiway would need to be widened to 35 feet and relocated to provide a separation from the runway of 227.3 feet from centerline to centerline, to accommodate the turboprop aircraft. The separation standard is based on the aircraft-specific standard for a Beech 1900C.
 - (c) The distance from the parallel taxiway to the apron taxilane would need to be increased to 75.4 feet, and the distance from the taxilane centerline to parked aircraft would have to be increased to 42.8 feet (based on the aircraft-specific standard for a Beech 1900C).
 - (d) The Building Restriction Line would need to be relocated farther from the runway, which would necessitate the removal of part of the existing shade building, a storage building and two trailer buildings to meet FAA standards for the larger aircraft.
 - (e) A new 5,000-gallon storage tank for Jet-A fuel would be needed to support the addition of a turboprop airplane in the training fleet.
 - (f) A fire truck would be needed to comply with FAA standards.

ALTERNATIVE CONCEPTS (Section 6)***Concept Alternatives***

Six alternative airport improvement concepts were identified:

- Concept A: Minimum Development With ARC B-I Standards
- Concept B: Maximization of Apron Taxi Capability With ARC B-I Standards
- Concept C: Development With ARC B-I Standards, Providing a Straight-in Instrument Approach Capability
- Concept D: Development With ARC B-I Standards, Providing a Straight-in Instrument Approach Capability, while not Significantly Encroaching Into the Technology Center Parking Lot
- Concept E: Minimum Development With ARC B-II Standards
- Concept F: Apron Taxi-Through Capability With ARC B-II Standards

The concepts differ primarily in the extent to which future airport development would accommodate (a) a straight-in instrument approach procedure or (b) larger training aircraft. In Concepts A and B, future development would follow the FAA planning standards for the single and twin-engine piston aircraft currently in the training fleet (ARC B-I), and the proposed GPS instrument approach procedure would be a circling approach. Concepts C and D assume that the proposed GPS procedure would be a straight-in instrument approach procedure, which would require the building restriction line to be relocated farther from the runway and could potentially require the relocation of some existing buildings. Concepts E and F are based on FAA standards for turboprop aircraft (ARC B-II), in the event that flight training in such aircraft would become a regular part of the training curriculum at Cochise College Airport. The concepts also differ in the location of shade buildings and tiedown apron configuration.

Concepts Evaluation

The alternative concepts were evaluated to identify the option that best satisfies the following development criteria:

- Satisfaction of Aviation Program requirements
- Safety of aircraft operations
- Compatibility with Cochise College development
- Community and environmental compatibility
- Operational efficiency
- Flexibility to accommodate changing needs
- Capital cost

All concepts would equally satisfy the first four criteria. Concepts A and B would be significantly lower in cost, \$2.2 to \$2.3 million over 20 years compared to \$3.6 to \$3.7 million for Concepts E and F. Concepts E and F would have the added flexibility to accommodate operations by turboprop aircraft on a regular basis.

It is concluded that the Master Plan be developed around Concept A (see Figure 6-1 in Section 6). The Concept A approach for expanding the tiedown apron is preferred over Concept B. Concepts E and F were not carried forward due to the high costs associated with modifying the airport to accommodate turboprop aircraft such as the B-1900. This size aircraft, if acquired by the College, would be based at one of the nearby public airports that can accommodate aircraft of this size. Concepts C and D were not carried forward because of the availability of a straight-in instrument approach procedure at Bisbee-Douglas Airport, the relative lack of poor weather at Cochise College Airport, and the potential need to relocate buildings.

It is concluded that master planning should proceed based on Concept A, but that phased development should occur in a way that does not preclude a future straight-in instrument approach procedure. This would be done by constructing the first phase of the shade building (five units) 370 feet from the runway centerline, within the footprint of the building shown in Concept A. When approach procedure studies are done, estimated to be in Phase 2, building relocation needs can be assessed and the type of approach procedure determined. The location of the remaining shade spaces would be determined based on whether the new approach procedure is circling or straight-in.

AIRPORT PLANS (Section 7)

Airport Layout Plan

The Airport Layout Plan (ALP), Figure 7-1 of Section 7, illustrates the recommended development plan for Cochise College Airport. The ALP provides for the phased implementation of the airport improvements without disrupting existing airport uses and activities, while conforming to the guidelines set forth by the Federal Aviation Administration (FAA) for the preparation of airport master plans. Airfield improvements shown on the ALP include:

- Acquiring property interest for Runway 23 and Runway 5 Runway Protection Zones.
- Installing Runway End Identifier Lights.
- Widening the parallel taxiway from 20 to 25 feet.
- Upgrading the runway and taxiway lights to Medium Intensity Runway Lights
- Installing a Global Positioning System (GPS) instrument approach system.
- Installing an Automated Weather Observing System.

Terminal Area Plan

Recommended Master Plan improvements in the building area are illustrated in the Terminal Area Plan (Figure 7-2 in Section 7). Terminal area improvements include:

- Constructing a new shade building to accommodate ten aircraft.
- Constructing an aircraft maintenance hangar.
- Expanding the aircraft parking apron to accommodate eight additional tiedowns.

Part 77 Airspace and Approach Surface Plan

The Airspace and Approach Zones Plan, presented as Figure 7-3 in Section 7, and Inner Portion of the Approach Surface Plan, presented as Figure 7-4 in Section 7, depicts the imaginary surfaces on and around Cochise College Airport as specified in Part 77 of the Federal Aviation Regulations (FAR), Objects Affecting Navigable Airspace. The purpose of the FAR Part 77 surfaces is to identify objects that could possibly, by their height, affect air navigation at an airport. Any penetration of the terrain or a man-made object above these surfaces is reviewed by the FAA to determine if it would affect safety of flight or influence an instrument approach procedure. The Airspace and Approach Zones Plan indicates there are only minor penetrations of the Part 77 surfaces, by objects such as fences, roads, a sign and a utility pole. None of the penetrations are expected to affect the safety of air operations at the airport.

Land Use Plan

The Land Use Plan, presented as Figure 7-5 in Section 7, indicates the ownerships of the property surrounding the College Campus. The land is located in unincorporated Cochise County and is zoned RU-4 by the County. Permitted uses in this zoning district include residences, mobile home and manufactured home parks, utility installations, churches, animal hospitals, riding stables, grocery stores and agriculture-related retail sales, among other uses. Minimum site area in the RU-4 zoning district is 4.0 acres. Maximum density is one dwelling unit per acre. Maximum height is 30 feet above grade. Airports and flying fields, including private landing areas, are permitted as a Special Use in the RU zoning district, subject to procedures and review criteria as set forth in Section 1716 of the Zoning Regulations. However, according to County officials, until 1975 there was no zoning regulation in the county. The college and airport were established over 30 years ago, thus Cochise College and the Cochise College Airport have no Special Use permits of any type on file with Cochise County.

The Plan also indicates that the entire Cochise College campus is devoted to education purposes (community college level).

Also shown on the drawing are the 2020 65db and 70 db noise contours. The Land Use Plan can be used as a Public Airport Disclosure Map

Property Map

The Property Map, is presented as Figure 7-6 in Section 7. The Cochise County Tax Assessor indicates that the Douglas Campus is made up of three parcels generally described as follows:

- Book 407, Map 61, Parcel 10 – The East Half of the Southeast Quarter of Section 3, Township 24 Range 26.
- Book 407, Map 61, Parcel 11 - The Northeast Quarter of Section 3 together with the South Half of Section Three except the East half of the Southeast Quarter, Township 24 Range 26.
- Book 407, Map 61, Parcel 13 – A portion of the North Half of Section 10 lying north of the Right-of-Way for State Highway 80, Township 24, Range 26.

Total acreage of the Campus according to the Tax Assessor is 517.24 acres.

ENVIRONMENTAL EVALUATION (Section 8)

There do not appear to be any fatal flaws associated with the proposed improvements to the Cochise College Airport. At this time it is unlikely that an EIS or any other Federal action would be required. However, appropriate studies and precautions should be undertaken before and during all improvements to ensure that the environmental integrity of the airport and its lands are preserved and that no local, state, or Federal environmental regulation is violated. If during any of the improvement activities any cultural resources, wetlands, or threatened or endangered species habitat are found, the improvement activities must be stopped immediately, expert analysts engaged and mitigation measures, if necessary, undertaken.

The Integrated Noise Model run for this study indicates no significant noise impact and requires no additional mitigation.

CAPITAL IMPROVEMENT PROGRAM AND FINANCIAL PLAN (Section 9)

The total cost of the proposed improvements is \$2,322,200 over twenty years. The initial five year program cost is \$666,030. The airport is not listed in the National Plan of Integrated Airport Systems (NPIAS) and therefore is not eligible for receiving Federal Aid in the form of a FAA grant from the Airport Improvement Program (AIP). The College must provide 10% of the project cost in order to qualify for a grant from the Arizona Airport Fund. It is recommended that the College investigate the advantages and disadvantages for inclusion into the NPIAS in order to be eligible for FAA Grants. A disadvantage of inclusion into the NIPAS may be the requirement to comply with FAA airport grant assurances that possibly effect operations of the airport that detract from the educational requirements of the College. One advantage is projects that qualify under the AIP can receive 91.6% of the project costs from the AIP, the remainder of the costs are split between the State and the College. Although the airport meets NPIAS entry criteria, there is no assurance that it would be admitted to the NPIAS due to its proximity to other NPIAS airports as discussed in Section 3.